

May 22, 2010

Ray Jenkins, a 12-year veteran of *The* Hilton County EMS, was considered to be hands down one of the best paramedics the county had ever seen. His clinical skills combined with an uncanny gut instinct, gained him widespread respect and admiration among his peers. He set high standards for his performance – more than anything, he hated blowing a case. He sat in the EMS lounge holding a cup of coffee blankly staring at the News Channel. His C shift buddies know better than to disturb him – he would have to get over it on his own terms.

They had been dispatched to a residence on Fairwood Avenue, a tree-lined street consisting of middle and upper middle class homes. The call had come in as a “51 year-old male, possible stroke.” Within 6 minutes they had arrived at the address, and were hastened indoors by a frantic woman who identified herself as the victim’s cleaning lady, a middle-aged Hispanic who barely spoke English. She had arrived to find the victim, (Samuel Raven, according to the cleaning lady), on the floor in his bedroom.

Raven was lying on his back. A small pool of emesis stained his chin and neck area. Jenkins tried to arouse the victim, but all he got was a low moan. Raven’s airway was patent, respirations a bit slow but adequate. Jenkins reached for the non-rebreather apparatus, while his partner, Vince Manelli started an IV.

“Christ, he’s hotter than hell,” remarked Manelli as he plunged the 18 gauge catheter into an arm vein. Jenkin’s brain went into overdrive as he turned up the oxygen then handed Manelli the normal saline.

Philip Floyd, who spoke a little Spanish, had tried in vain to obtain some history from the hysterical Hispanic housekeeper.

“It’s no use, she can’t tell us much of anything,” he said while grabbing the monitor leads.

Raven was diaphoretic and Floyd had a difficult time with the monitor leads.

“What’s going on with this guy?” Floyd asked as his fingers fumbled with the monitor pads. “Is he septic?”

“Not sure yet,” Jenkins replied. His pupils are dilated, no signs of trauma. “Grab some vitals.”

“He’s tachin’ away,” Manelli replied. “Heart rate is about 160 and BP 102 over palp.”

“G stick is 89,” Floyd added.

Jenkins racked his brains trying to piece together the findings. The patient was minimally responsive, diaphoretic, hot and tachycardic. This didn’t fit the classic stroke picture. Sepsis was a possibility, but something just didn’t fit. Jenkins glanced around the room, looking for clues.

“Go ahead and load him up, I’ll take a quick look around.”

The bed was unmade, and a few clothes were lying on the floor in front of the chair. In the bathroom, the tile floor was wet and littered with broken glass. Jenkins carefully stepped inside, crunching the glass fragments underfoot. A tube of opened toothpaste lay on the counter. In the medicine cabinet Jenkins noted a bottle of Tylenol, St. John’s wort, Ginseng, cough syrup and Benadryl. A prescription bottle caught his attention. He picked it up and looked at the label, which read “Pristiq.” Jenkins had never heard of it. There were a couple pills in the bottle and before he could examine the label more closely, Manelli shouted:

“Ray, get in here, he’s seizing!”

Jenkins turned quickly and slipped on the wet floor and fell onto his hands and knees. The bottle skidded across the tile as both his palms landed on sharp shards of glass.

“Dammit,” he yelled, his hands bleeding from multiple cuts.

The pain was intense as he got up and rinsed his hands. The glass fragments would have to be dealt with later. He limped into the room to witness the patient’s tonic-clonic activity. Floyd gave the Valium and in a few seconds the seizure abated.

“Jeez, what the hell happened to you?” Manelli asked.

“The bathroom was booby-trapped, come on, wrap my hands with some gauze and let’s get out of here.”

En route to the ED, Jenkins called in a possible stroke alert. The twelve-lead revealed a bundle-branch block with a rate of 150. In the emergency department, the physician on duty, Douglas Griggs, quickly examined the unresponsive patient.

“Probably a brain bleed,” he announced. “Let’s get the head CT stat!”

In the ED, Jenkins asked the physician assistant to pull out the shards of glass from his palms. After several minutes of agonizing pain, the job was complete and Jenkins and his team headed back to the station.

“Do you think he had a brain bleed?” Floyd asked.

“I dunno, I guess it’s possible,” Jenkins responded.

“What was going on in the bathroom?” Manelli asked.

“It was a frigging disaster in there.” Jenkins replied. “Water and broken glass all over the floor...I found a prescription bottle, it still had a few pills in it. I didn’t recognize the name, Pres-something. I grabbed the bottle to take with us, but lost it when I slipped and fell.”

A few hours later Jenkins called the ED to get an update on the patient. A nurse informed him that the head CT was negative. The patient had seized again and remained tachycardic. He had been intubated and was in critical condition in the ICU.

“Dr. Griggs looked up the patient on the EHR and notified the PCP. Raven had a history of severe depression and was recently prescribed an antidepressant, Pristiq. Griggs thinks the patient may have overdosed,” the nurse said.

A cold wave of nausea gripped Jerkin’s gut as the cell phone dropped onto his lap.

DEPRESSION

According to major surveys, major depressive disorder affects nearly 15 million Americans (nearly 7% of the adult population) in a given year. While depression is an illness that can afflict anyone at any time in their life, the average age of onset is 32 (although adults age 49 - 54 years are the age group with the highest rates of depression.).

In major, or acute, depression, at least five of the symptoms listed below must occur for a period of at least 2 weeks, and they must represent a change from previous behavior or mood. Depressed mood or loss of interest must be present. Symptoms include:

1. Depressed mood on most days for most of each day -- irritability may be prominent in children and adolescents

2. Total or very noticeable loss of pleasure most of the time
3. Significant increases or decreases in appetite, weight, or both
4. Sleep disorders, either insomnia or excessive sleepiness, nearly every day
5. Feelings of agitation or a sense of intense slowness
6. Loss of energy and a daily sense of tiredness
7. Sense of guilt or worthlessness nearly all the time
8. Inability to concentrate occurring nearly every day
9. Recurrent thoughts of death or suicide

SSRI AND SNRI Anti-Depressants

There are numerous medications on the market for treatment of depression. Many, such as Prozac, Zoloft, Paxil, Celexa and Lexapro are familiar names and belong to the relatively new class of anti-depressants known as **Selected Serotonin Reuptake Inhibitors (SSRIs)**. Other drugs, perhaps less familiar (Effexor, Cymbalta and Pristiq) are known as **SNRIs (Serotonin and Norepinehrine reuptake inhibitors)** and are related to the SSRI class of drugs but in addition to inhibiting **reuptake of Serotonin**, they also inhibit reuptake of **Norepinephrine**. Serotonin and Norepinephrine are neurotransmitters. By inhibiting neurotransmitter reuptake, the SSRI and SNRI drugs allow more neurotransmitters to be available to the brain which helps in the treatment of major depression.

SSRI and SNRI antidepressants have replaced Tricyclic Antidepressants (Elavil, Pamelor, Tofranil, Sinequan) in clinical practice because of the high incidence of fatal overdoses with Tricyclic drugs due to cardiac and neurologic toxicity. Although the SSRI drugs are generally safer, they can still cause serious consequences with overdose.

CLINICAL MANIFESTATIONS OF SSRI AND SNRI OVERDOSE

Serotonin syndrome can be seen when an SSRI is combined with another drug (Tricyclic antidepressants, opiates, Ultram, Lithium, amphetamines and others) or certain herbal supplements like *St. John's Wort* or *Ginseng*. Serotonin syndrome symptoms may include mental status changes, autonomic instability (tachycardia, labile blood pressure and hyperthermia), nausea, vomiting and neuromuscular aberrations such as incoordination.

Overdose of Pristiq, like other SNRI agents, can lead to tachycardia, decreased mental status, mydriasis (dilated pupils), seizures and vomiting. EKG changes include prolongation of the QT interval, bundle branch block, bradycardia, sinus tachycardia and ventricular tachycardia. Rhabdomyolysis (muscle breakdown), liver necrosis and death can occur.

TREATMENT

Treatment of SNRI or SSRI overdose is generally supportive and consists of adequate airway, oxygenation and ventilation measures. Cardiac monitoring is essential, as arrhythmias are relatively common. Seizures can occur and must be treated accordingly. There are no known antidotes for SSRI/SNRI overdose. Dialysis is not beneficial in these cases. As in all overdose situations, consider and check for the possibility of multiple drug involvement.

SUMMARY

The patient in this scenario had overdosed on a combination of Pristiq, (an SNRI antidepressant), and herbal products (Ginseng and St. John's wort). Always check the scene for clues, prescription and non-prescription bottles. Herbal products, now in widespread use, can have devastating consequences in overdose situations.

Andrew Garlisi MD, MBA, MPH, VAQSF